

TRANSMITTAL SLIP		DATE	10/16/57
TO: TSS/ED			
ROOM NO.	BUILDING		
	West end		
REMARKS:			
<p>Att.</p> <p>1 Copy progress report</p> <p>RD 112 T.O. 2</p> <p>duplicate retained for</p> <p>OL/PD/CAB files</p> <p>CONFIDENTIAL</p> <p>Wanna</p> <p>file this instead of Carlson copy.</p>			
FROM: OL/PD/CAB			
ROOM NO.	BUILDING		
1305	Who Eye		

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*Card 10/11/57  
9:00**10/15*

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October 11, 1957

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Subject: Contract 112, Task II

Dear Sir:

This reports progress during August, 1957, on the development of an Equipment Safeguard Unit which shall meet the following requirements:

1. The unit shall be wholly contained in a weather-tight enclosure of dimensions approximately 6" x 5-3/4" x 4" (dimensions to meet AN rack mounted equipment specifications).
2. The unit shall initiate two strands of Primacord through reliable independent explosive trains.
3. The unit shall be so designed as to prevent accidental initiation by requiring two-handed operation.
4. The unit shall provide a reliable time delay of at least 30 seconds between actuation and initiation.
5. The unit shall pass environmental tests necessary for qualification under Military Specification MIL-E-5272A, titled "Environmental Testing, Aeronautical and Associated Equipment, General Specifications for."

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6. The unit shall be so designed as to permit surveillance and replacement of explosive and pyrotechnic components periodically.

7. The unit shall be detonator safe; that is, initiation of the detonators in the safe position shall not initiate the succeeding elements in the explosive train, nor shall such initiation throw fragments or particles from the weather-tight enclosure.

### PROGRESS

During the period covered by this report, the model of the Equipment Safeguard Unit was subjected to the immersion test in accordance with Specification No. MIL-E-5272A.

The first test was conducted with the unit sealed with .010" thick silicone rubber gaskets. This test resulted in failure, all gaskets leaking badly. The test was repeated using .030" neoprene gaskets and most leaks were immediately eliminated. However, minor leaks occurred under the firing pin cover plates and under the primacord fittings. A repositioning of the screws eliminated the leaks under the firing pin cover plates and gaskets eliminated the leaks under the primacord fittings. The test was repeated and leaks were found around the primacord end cup in the primacord fitting. Various ways were tried to eliminate these, such as the use of "O" rings, flat neoprene washers, etc. None of these eliminated the leak condition. In view of this, it has been decided that the primacord fitting, Drawing No. A12519, named "Short Union" will be redesigned to have an .020" thick web in the bottom. Immersion tests run with sample fittings of this type were successfully passed.

Various propagation tests were made using all combinations of the primacord fittings. As a result of these tests it has been determined that reliable propagation can be achieved using the primacord fittings and end cups (containing no charge) even when air gaps as high as 1/8" exist.

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Propagation tests were made using quarter sections of the housing, Drawing No. D12513, and the rotor, Drawing No. D12503. [redacted]

[redacted] successfully initiated primacord through the proper primacord fittings and end cups (unloaded) in each of four tests.

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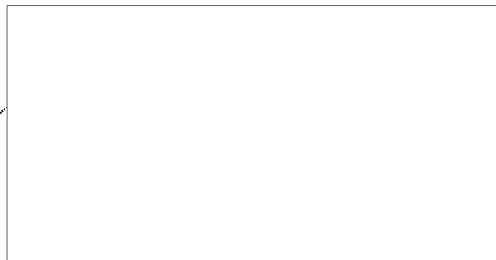
FUTURE WORK

In view of the success of the above propagation tests, work has been started on the fabrication of five Equipment Safeguard Units to be expended in static safety tests. Dependent upon the success of the static safety tests, fabrication of the forty units for delivery will be started.

STATUS OF FUNDS

Total Funds Allocated	\$ 33,685.62
Previous Expenditures	<u>13,075.34</u>
Balance at Beginning of Period	\$ 20,210.28
Expenditure During Period	<u>5,957.00</u>
Balance at End of Period	\$ 14,253.28

Very truly yours



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WHR:kd

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